



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,544	09/24/2003	Kurt Wiesen	5123-550 (16420-02108)	5495

23392 7590 04/25/2007
FOLEY & LARDNER
2029 CENTURY PARK EAST
SUITE 3500
LOS ANGELES, CA 90067

EXAMINER

WATKO, JULIE ANNE

ART UNIT	PAPER NUMBER
----------	--------------

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/670,544	Applicant(s) WIESEN ET AL.	
	Examiner Julie Anne Watko	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-41, 43-50 and 52-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19, 20, 22-29, 33-36, 38, 43, 45-50 and 52-54 is/are rejected.
- 7) ☒ Claim(s) 21, 30-32, 37, 39-41 and 44 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/24/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 38 and its dependent claims 50 and 52-54, and claim 46 are rejected under 35

U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 38 recites the limitation “an electrode contacting the pinned layer” in the last line.

On page 13, lines 7-10, the specification recites “certain layers, such as most seed layers, conductors, pinning layers, isolation layers, and so forth, are omitted for ease of illustration and understanding. Instead, the most relevant layers are described herein.”

From this teaching, it is clear that the appearance of the Figures is insufficient to establish a written description of contact between an electrode and a pinned layer. Although the specification recites “On top of the electrode 44, a pinned layer 46 ... has been deposited” on page 13, lines 13-14, the specification is silent regarding whether the pinned layer contacts the electrode.

Claim 46 contains a similar recitation and is similarly not adequately described.

Claims 50 and 52-54 depend from inadequately described claims, and are thus inadequately described.

Art Unit: 2627

3. Claim 38 and its dependent claims 50 and 52-54, and claim 46 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 38 recites the limitation “an electrode contacting the pinned layer” in the last line.

If the Examiner were to assume, *arguendo*, that the pinned layer contacted the electrode (as suggested by the appearance of the layers in Fig. 3, for example), Applicant would have failed to enable a person of ordinary skill in the art to pin the pinned layer without disturbing the alleged contact between pinned layer and electrode. Specifically, a person of ordinary skill in the art would pin the pinned layer by placing a pinning layer in contact with a lower surface of the pinned layer. Thus, it is unclear how the electrode may contact the pinned layer without rendering the GMR stack inoperable.

Claim 46 contains a similar recitation and is similarly not enabled.

Claims 50 and 52-54 depend from inadequately described claims, and are thus not enabled.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

Art Unit: 2627

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 19-20, 22-26 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mack et al (US Pat. No. 6462919 B1) in view of Fontana, Jr. et al (US Pat. No. 6680832 B2).

As recited in claim 19, Mack et al show a read head (see Fig. 6A), comprising: a GMR spin valve stack (including 212 and 208) including at least a pinned layer 212, a free layer 208, wherein sides of the pinned layer 212 and the free layer 208 are substantially aligned (see Fig. 6A), and a stabilization layer including a pair of separated regions of patterned exchange bias material (202A and 202B), each region of patterned exchange bias material being disposed over a respective one of opposite ends of the free layer (see locations of 202A and 202B in Fig. 6A); and a pair of shields 114 and 118, one disposed on either side of the GMR spin valve stack (see Fig. 1).

As recited in claim 19, Mack et al are silent regarding one of the shields being formed to include integral side shields that substantially enclose the free layer between the pair of shields.

As recited in claim 19, Fontana, Jr. et al show one 13 of two shields (10 and 13) being formed to include integral side shields (15 and 17) that substantially enclose free layer 38 between the pair of shields.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make one of the shields of Mack et al include integral side shields that substantially

Art Unit: 2627

enclose free layer between the shields as taught by Fontana, Jr. et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to form one of the shields to include integral side shields that substantially enclose the GMR spin valve stack between the pair of shields in order to make flux attenuation more effective, to suppress off-track side reading and to increase trackwidth resolution as taught by Fontana, Jr. et al (see col. 2, lines 39-44; see also col. 3, line 56-col. 4, line 2).

As recited in claim 20, Mack et al are silent regarding whether the GMR spin valve stack is configured to operate in a current perpendicular to plane (CPP) mode.

As recited in claim 20, Fontana, Jr. et al show that the GMR spin valve stack is configured to operate in a current perpendicular to plane (CPP) mode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the GMR spin valve stack of Mack et al to operate in a CPP mode as taught by Fontana, Jr. et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to increase $\Delta R/R$ by decreasing current shunting as is notoriously well known in the art.

As recited in claim 22, Mack et al are silent regarding whether the GMR spin valve stack is configured to operate in a current in plane (CIP) mode.

Official notice is taken of the fact that it was known in the art at the time the invention was made to operate a GMR spin valve stack in a current in plane (CIP) mode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to operate the GMR spin valve stack of Mack et al in CIP mode. The rationale is as

Art Unit: 2627

follows: one of ordinary skill in the art would have been motivated to have the GMR spin valve stack be widely used as taught by Fontana, Jr. et al (see col. 1, lines 17-22).

As recited in claim 23, Mack et al show electrically conductive leads 116 (or 260A-B, or 278A-B) that are in a gap formed between the pair of shields (114 and 118).

As recited in claim 24, Mack et al show a layer of insulating material (115 and 117) forming a gap between the pair of shields (114 and 118) in the regions at either end of the GMR spin valve stack.

Regarding claim 25: The product by process limitations in these claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

As recited in claim 26, Mack et al are silent regarding whether the gap layer includes a portion that covers at least portions of the sides of the stack.

As recited in claim 26, Fontana, Jr. et al show that the gap layer 14 includes a portion that covers at least portions of the sides of the stack (see Fig. 2; see also Fig. 4).

As recited in claim 43, Mack et al show that sides of the separated regions of patterned exchange bias material (202A-B) are substantially aligned with the sides of the free layer 208 and the pinned layer 212 of the GMR stack (see Fig. 6A).

7. Claims 27-29, 33-36, 38, 45, 47-49, 50 and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seyama et al (US Pat. No. 6801413 B2) in view of Fontana, Jr. et al (US Pat. No. 6680832 B2).

As recited in claim 27, Seyama et al show a read head (see Fig. 13A-13B, for example), comprising: a GMR spin valve stack 23 including at least a pinned layer and a free layer (see col. 10, line 61, “dual spin valve layer 23”; see also col. 6, lines 5-12, especially lines 7-8, “pinned layer ... free layer”); a first shield 22 disposed at a first end of the GMR spin valve stack and a second shield 26 disposed at a second end of the GMR spin valve stack, one disposed on either side of the GMR spin valve stack; and an insulated layer 56 of permanent magnet material 58 disposed between the shields and abutting the free layer (although the Examiner believes that the “abutting” limitation is met by the structure shown in Fig. 3A, even if it were not, the reference teaches varying the number of hard and insulating layer pairs (see col. 11, lines 64-67), as well as the thickness ratio (see col. 12, line 1-2) of hard layer to insulating layer, such that it would have been obvious to arrive at the “abutting” limitation within the process of routine experimentation and optimization).

As recited in claim 27, Seyama et al are silent regarding the second shield being formed to include integral side shields that extend toward the first shield substantially enclose the GMR spin valve stack between the pair of shields: wherein the integral side shields of the second shield extend beyond at least a portion of the insulated layer of permanent magnet material.

Art Unit: 2627

As recited in claim 27, Fontana, Jr. et al show second shield 13 being formed to include integral side shields (15 and 17) that substantially enclose (see Fig. 4) the GMR spin valve stack (including 34 and 38) between the pair of shields (10' and 13): wherein the integral side shields of the second shield extend beyond at least a portion 78 of the first shield 10'.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form one of the shields of Seyama et al to include integral side shields that substantially enclose the GMR spin valve stack between the pair of shields and extend beyond at least a portion of the first shield as taught by Fontana, Jr. et al, such that the second shield would necessarily extend beyond at least a portion of the insulated layer of permanent magnet material of Seyama et al because said permanent magnet material is above the 1st shield 22 of Seyama et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to form one of the shields to include integral side shields that substantially enclose the GMR spin valve stack between the pair of shields and extend beyond at least a portion of the first shield and permanent magnet material in order to make flux attenuation more effective, to suppress off-track side reading and to increase trackwidth resolution as taught by Fontana, Jr. et al (see col. 2, lines 39-44; see also col. 3, line 56-col. 4, line 2).

As recited in claim 28, Seyama et al show that the GMR spin valve stack is configured to operate in a current perpendicular to plane (CPP) mode ("SV-CPP element", see col. 10, lines 54-59).

As recited in claim 29, Seyama et al show that the pair of shields are electrically conductive ("lower electrode 22 of NiFe acting as a lower magnetic shield layer" and "upper electrode 26 of NiFe also acting as an upper magnetic shield layer"; see col. 10, line 60-col. 11,

line 3) and wherein the GMR spin valve stack includes an electrode at the top thereof and an electrode at the bottom thereof.

As recited in claim 33, Seyama et al show a pair of gap layers 57 of insulating material, one disposed on either side (upper and lower sides in Fig. 13B) of the permanent magnet material 58 to form a gap between the first and second shields (22 and 26) in the regions at either end (left and right ends in Fig. 13A) of the GMR spin valve stack.

Regarding claim 34: The product by process limitations in these claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessman*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process limitations or steps, which must be determined in a “product by process” claim, and not the patentability of the process limitations. Moreover, an old or obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not. Note that the applicant has the burden of proof in such cases, as the above case law makes clear.

As recited in claim 35, Seyama et al show that the gap layer 57 includes a portion that covers (see Fig. 13A) at least portions of the sides of the stack 23.

As recited in claim 36, Seyama et al show that the free layer (part of 23) has opposed ends (left and right ends in Fig. 13A) and the layer of permanent magnet material 58 abuts at least a portion of the ends of the free layer (although the Examiner believes that the “abutting”

Art Unit: 2627

limitation is met by the structure shown in Fig. 3A, even if it were not, the reference teaches varying the number of hard and insulating layer pairs (see col. 11, lines 64-67), as well as the thickness ratio (see col. 12, line 1-2) of hard layer to insulating layer, such that it would have been obvious to arrive at the “abutting” limitation within the process of routine experimentation and optimization).

As recited in claim 38, to the extent described and enabled, Seyama et al show a read head (see Figs. 13A-B), comprising: a GMR spin valve stack 23 including at least a pinned layer and a free layer (see col. 10, line 61, “dual spin valve layer 23”; see also col. 6, lines 5-12, especially lines 7-8, “pinned layer ... free layer”); a first shield 22 disposed at a first end of the GMR spin valve stack and a second shield 26 disposed at a second end of the GMR spin valve stack 23; and an insulated layer of permanent magnet material 58 disposed between the shields and abutting opposite ends of the GMR spin valve stack the insulated layer of permanent magnetic material comprising a first insulating layer 57 abutting a lower portion of the GMR spin valve stack 23 and an electrode 22.

As recited in claim 38, to the extent described and enabled, Seyama et al are silent regarding the second shield being formed to include integral side shields that substantially enclose at least a portion of the free layer between the pair of shields.

See teachings, rationale and motivation for combining teachings above for claim 27.

As recited in claim 38, Seyama et al arguably show the first insulating layer 57 abutting a lower portion of the GMR spin valve stack including said pinned layer (insofar as the GMR spin valve stack 23 includes the pinned layer, and insofar as 57 abuts lower portion of 23).

Seyama et al are silent regarding whether the insulating layer abuts the pinned layer (although this limitation is arguably not claimed, the Examiner includes this discussion for completeness).

Seyama et al teach varying the number of hard and insulating layer pairs (see col. 11, lines 64-67), as well as the thickness ratio (see col. 12, line 1-2) of hard layer to insulating layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the “abutting” limitation within the process of routine experimentation and optimization. The rationale is as follows: one of ordinary skill in the art would have been motivated to arrive at the “abutting” limitation within the process of routine experimentation and optimization in order to carry out various modifications in the scope and spirit of the invention of Seyama et al as taught by Seyama et al (see col. 11, lines 22-26; see also col. 11, line 64-col. 12, line 2).

As recited in claims 45 and 50, Seyama et al show that the insulated layer of permanent magnet material (see Fig. 13B) comprises: a first insulating layer 57 abutting a lower portion of the GMR spin valve stack; a permanent magnet material layer 58 abutting the free layer (although the Examiner believes that the “abutting” limitation is met by the structure shown in Fig. 3A, even if it were not, the reference teaches varying the number of hard and insulating layer pairs (see col. 11, lines 64-67), as well as the thickness ratio (see col. 12, line 1-2) of hard layer to insulating layer, such that it would have been obvious to arrive at the “abutting” limitation within the process of routine experimentation and optimization) of the GMR spin valve stack 23; and a second insulating layer 57 formed over the permanent magnet material layer.

Art Unit: 2627

As recited in claims 47 and 52, Seyama et al are silent regarding whether the permanent magnet material layer has a thickness that is substantially equal to a thickness of the free layer of the GMR spin valve stack.

It is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization/ experimentation and thereby obtain various optimized relationships including those set forth in claims 47 and 52.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the magnetic head of Seyama et al satisfy the relationships set forth in claims 47 and 52. The rationale is as follows: one of ordinary skill in the art would have been motivated to have had the magnetic head of Seyama et al satisfy the relationships set forth in claims 47 and 52 since it is notoriously old and well known in the magnetic head art to routinely modify a magnetic head structure in the course of routine optimization /experimentation and thereby obtain various optimized relationships including those set forth in claims 47 and 52 so as to achieve adequate longitudinal biasing by stabilizing the magnetic domain of the free layer, thereby eliminating Barkhausen noise as is notoriously well known in the art. Moreover, absent a showing of criticality (i.e., unobvious or unexpected results), the relationships set forth in claims 47 and 52 are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the Applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Regarding claims 48-49 and 53-54: See teachings, rationale and motivation above for claims 27 and 38.

Allowable Subject Matter

8. Claims 21, 30-32, 37, 39-41 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 19-20, 22-26 and 43 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's arguments filed January 26, 2007, have been fully considered but they are not persuasive.

In response to applicant's argument that "Seyama teaches away from the use of Gontana's second shield that extends toward a first shield when an insulated layer of permanent magnet material 56 is placed in an abutting relationship next to a spin valve stack 23. ... One following

Art Unit: 2627

the teachings of Fontana and Seyama would not be led to such a structure, but rather would be led away from such a structure by comparing the shield structure used by Seyama to the shield structure used by Fontana and recognizing that Seyama does not use enclosing side shields due to the presence of the abutting insulated layer of permanent magnet material” (see specification, page 11): The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this case, Fontana, Jr. et al teach that the use of integral side shields is advantageous. This suggests that integral side shields are desirable to be added to the shields of Seyama et al in order to make flux attenuation more effective, to suppress off-track side reading and to increase trackwidth resolution as taught by Fontana, Jr. et al (see col. 2, lines 39-44; see also col. 3, line 56-col. 4, line 2).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

Art Unit: 2627

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday-Friday, 10AM to 5PM and all day Saturday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko, J.D.
Primary Examiner
Art Unit 2627

April 21, 2007
JAW

A handwritten signature in black ink, appearing to be 'JAW', with a large, stylized loop at the end.